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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/647,985	08/26/2003	Patricia Beauregard Smith	TI-33260	3087

23494 7590 03/16/2006

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EXAMINER

EL ARINI, ZEINAB

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 03/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/647,985	Applicant(s) SMITH ET AL.	
	Examiner Zeinab E. EL-Arini	Art Unit 1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15, 17, 18 and 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15, 17, 18 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>01/23/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The final rejection stated in paper No. 122205 has been withdrawn in view of applicant's remarks.

The amendment and remarks filed 03/01/06 have been acknowledged and entered.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-2, 5-6, 9,13, and 15 are rejected under 35 U.S.C. 102(a) as being anticipated by Chang et al. (2003/0008518).

3. Chang et al. disclose a method for cleaning wafer comprising the patterning step, the wet cleaning and the non-plasma annealing steps as claimed. The reference discloses the dielectric layer, performing a dry clean of the patterned dielectric layer to remove the photoresist prior to the wet cleaning. The reference also discloses the oxygen plasma, and high temperature annealing as claimed. See paragraphs 10-11, and 19-22.

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1-2 and 5-6 are rejected under 35 U.S.C. 102(a) as being anticipated by Nguyen et al. (2003/0104320).

Art Unit: 1746

Nguyen et al. disclose a method for cleaning a wafer comprising the patterning step, the plasma cleaning, wet cleaning, and the annealing as claimed. See paragraphs 5 and 7.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2, 4-6,9,15, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Chiu et al. (6,107,202).

Chiu et al. disclose a method of cleaning a wafer comprising patterning, wet cleaning, the annealing, the plasma and the solvent as claimed. See col. 3, lines 11-65, and col. 8, lines 16-17 and 67.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 10-12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al.'518.

Chang et al.'518 as discussed supra do not teach the temperature and the time as claimed.

It would have been obvious for one skilled in the art to adjust the temperature and the time to obtain optimum results.

8. Claims 3,7-8,10-12,14,17-18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al.'518 or Chiu et al. or Nguyen et al. in combination with Smith et al. (2002/0058397) and chang (5,643,407).

Chang et al.'518 or Chiu et al. or Nguyen et al. as discussed supra do not teach the low pressure anneal, the temperature, the time, the metal deposition, the acid, and removing the fluorine based solvent as claimed.

Chang '407 discloses the low pressure annealing, the acid, and the temperature as claimed.

Smith et al. disclose the low pressure anneal, the metal deposition and removing the fluorine based solvent from a substrate.

It would have been obvious for one skilled in the art to use the acid, the temperature, and the low pressure annealing taught by Chang'407 , and the low pressure annealing, the temperature, and removing the fluorine based solvent taught by Smith et al. in the Chang et al. or Chiu et al or Nguyen et al. process to obtain the claimed process. This is because low pressure annealing is well known in the semiconductor manufacturing process. This is also because all references are from the same technical endeavor, which is a method for cleaning and fabricating a substrate.

Response to Arguments

9. Applicant's arguments with respect to claims 1-15, 17-18, and 20 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 1746

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zeinab E. EL-Arini whose telephone number is (571) 272-1301. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Zeinab E. EL-Arini
Zeinab E. EL-Arini
Primary Examiner
Art Unit 1746

ZEE
03/14/06